In order to better understand the driver’s state and detect e.g. sudden sickness, there is a big interest in monitoring vital signs such as breathing and heart rate in an automotive environment.

Remote photoplethysmography (rPPG) is a method to estimate a person’s heart rate from video data. This is possible since the blood circulating through the body introduces subtle changes in skin appearance.

Applying such a method in an automotive environment comes with a lot of challenges, in particular illumination changes and motion noise. The goal of this master thesis is to investigate the feasibility of such an approach in the automotive environment.

Breathing based on Radar?
Data for heart rate in automotive environment available?
Use video data from Fit2Drive data collection

Requirements:
Python
Deep Learning
Signal Processing

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